



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,672	08/19/2003	Ajoy K. Ray	ITL.0996US (P14028)	5759
21906 7590 06/19/2007 TROP PRUNER & HU, PC 1616 S. VOSS ROAD, SUITE 750 HOUSTON, TX 77057-2631			EXAMINER CHAWAN, SHEELA C	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 06/19/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/643,672	Applicant(s) RAY ET AL.	
	Examiner Sheela C. Chawan	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-23 is/are rejected.
- 7) ☒ Claim(s) 10 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***DETAILED ACTION***

1. The indicated allowability of claims 1-8 and 10-23 is withdrawn in view of the newly discovered reference(s) to Behzad Dariush et al. (Spatiotemporal analysis of face profiles: Detection, segmentation, and registration –IEEE 1998). Rejections based on the newly cited reference(s) follow.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Behzad Dariush et al. (Spatiotemporal analysis of face profiles: Detection, segmentation, and registration –IEEE 1998).

As to claim Behzad Dariush et al. disclose a method comprising:

using active contours to detect image boundaries of a first view and a second view of a human face (abstract; paragraph 3; Figure 2); and

marking a first set of fiducial points (paragraph 4; Figure 4) on the first view and a second set of fiducial points on the second view.

As to claim 2, Behzad Dariush et al. disclose the method, including:

determining a first feature set using the first set of fiducial points, and determining a second feature set using the second set of fiducial points (paragraph 4; Figure 4).

As to claim 3, Behzad Dariush et al. disclose the method, further comprising:

normalizing distances in the first feature set in terms of a distance between two preselected fiducial points of the first set of fiducial points (Figure 3).

As to claim 4, Behzad Dariush et al. disclose the method, wherein the active contours comprise snake contours and the first and second views comprise a front view and a side view (paragraph 4; curvature analysis reads on snake contours).

As to claim 5, Behzad Dariush et al. disclose the method, wherein the snake contours for the front view comprise at least two of a face boundary, an eye boundary, a brow boundary, a nose boundary, and a lip boundary (paragraph 4).

As to claim 6, Behzad Dariush et al. disclose the method, wherein the first feature set and the second feature set each comprise less than ten distances (Figure 4; only 9 fiducial points providing less than 10 distances).

Claim 20 is a system claim corresponding to the method of claim 1 and therefore this claim is also rejected for the same reasons.

Claim 21 is a system claim corresponding to the method of claim 2 and therefore this claim is also rejected for the same reasons.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly

owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7-8, 10-19 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Behzad Dariush et al. (Spatiotemporal analysis of face profiles: Detection, segmentation, and registration –IEEE 1998) in view of Tolga et al. (Indexing large metric spaces for similarity search queries----IDS).

As to claims 7-8 and 22-23, Behzad Dariush et al. do not disclose the method further comprising storing the first feature set and the second feature set in a database and partitioning said database based on a feature vector of one of the first feature set and the second feature set. However, Tolga et al. discloses an indexing large metric spaces for similarity search queries including storing the first feature set and the second feature set in a database and partitioning the database based on a feature vector of one of the first feature set and the second feature set (see abstract; Figure 5; paragraph 5; database having a hierarchical tree structure corresponds to partitioning of database). Both references are combinable because they both deal in solving the similar problem of searching similarity between individuals. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Eraslan by including the teaching of Tolga et al. Because such a modification will solve the problem of answering similarity based queries efficiently for high-dimensional metric spaces as mentioned by Tolga et al. at page 8, paragraph 4.

As to claims 10 and 16, Behzad Dariush et al. disclose a method comprising:  
obtaining feature set information including fiducial points from a first view of a human face and a second view of the human face (abstract; paragraph 4; Figure 4);

Behzad Dariush et al. do not clearly disclose storing the feature set information in a database having a hierarchical tree structure as claimed. However, Tolga et al. discloses an indexing large metric spaces for similarity search queries including database having a hierarchical tree structure (see abstract). Both references are combinable because they both deal in solving the similar problem of searching similarity between individuals. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Eraslan by including the database having a hierarchical tree structure as taught by Tolga et al. Because such a modification will solve the problem of answering similarity based queries efficiently for high-dimensional metric spaces as mentioned by Tolga et al. at page 8, paragraph 4.

As to claim 11, Tolga et al. disclose the method, wherein the database includes feature set information for a plurality of individuals (see paragraph for Introduction).

As to claims 12 and 17, Tolga et al. disclose the method of claim 10, further comprising determining whether to store the feature set information in a first branch or a second branch of the hierarchical tree structure based upon a value in the feature set information (at least abstract).

As to 13, Tolga et al. disclose the method wherein the value corresponds to a metric distance function (abstract; title).

As to claims 14 and 18, Tolga et al. disclose the method, further comprising searching the database for at least one search result corresponding to a query image (abstract).

As to claims 15 and 19, Tolga et al. disclose the method, further comprising searching the first branch or the second branch for a search result corresponding to a query image based on a metric distance function of the query image Abstract).

***Allowable Subject Matter***

4. Claims 9 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


**Contact Information**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is. 571-272-7446. The examiner can normally be reached on Monday - Thursday 7.30 - 6.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on 571-272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sheela Chawan  
Patent Examiner  
Group Art Unit 2624  
June 5, 2007

  
SHEELA CHAWAN  
PRIMARY EXAMINER